The Aboriginal Use of Fresh-Water Monongahela Chert in Ohio and West Virginia

by
James L. Murphy
Case Western Reserve University
Cleveland, Ohio

The aboriginal utilization of nodular chert occurring in fresh-water limestones of the Monongahela Group (Pennsylvanian System) of Ohio and West Virginia—indeed, the very occurrence of such nodular chert in these rocks—has gone completely unnoted in the archeological and geological literature of the state. Stout and Schoenlaub (1945), in their comprehensive treatment, state rather categorically and, as it happens, somewhat inaccurately that:

> "Throughout the great series of fresh-water limestones in the Allegheny, Conemaugh, and Monongahela series in the Pennsylvanian system and in the Washington and Greene series of the Permian system, true flint or even chert is not recorded. In Ohio the flint as a component of the carbonate rocks belongs entirely in the marine formations."

Outcrops of nodular flint occurring in fresh-water limestone were first called to my attention by Mr. Harry Izenour, Ashtabula, Ohio, in 1972. His father, George Izenour, Salem, Ohio, had collected an outcrop along the highway south of Adena, Jefferson County. Subsequently, Mrs. Vivien Marshall and I located several additional outcrops along the valley of Short Creek, one of the best being along the highway north of Ramsey (SE 1/4 NW 1/4 section 24, Smithfield Township, Jefferson County). This outcrop is illustrated in Figure 6. Additional outcrops were noted in a strip mine south of St. Casimir's Church, 1 mile east of Adena.

In 1973, Mr. John J. Burke, Cleveland Museum of Natural History, informed me that artifacts made of a local fresh-water flint had been found in the Cherry Hill area north of Wheeling, West Virginia, though he knew of no outcrops. A trip to Wheeling revealed that none of the land in the Cherry Hill area was open for field survey, but an outcropping of fresh-water nodular chert was located in an abandoned strip mine on the north fork of Short Creek (West Virginia). Detailed geologic studies of the Wheeling area (Streib and Donaldson 1969; Grimsley 1906) failed to note any occurrences of this fresh-water flint, and there is only one dubious reference to it in the archeological literature. It occurs in Lewis' (1955) study of the Wheeling College site (46 Oh22), in which he mentions a corner notched point "of yellowish-grey Ritchie county flint." He may be referring here to Brush Creek or "Hughes River" flint from Ritchie County, West Virginia, or he may possibly be referring outcrops of Monongahela flint in the Ritchie County district immediately south of Wheeling College. This area has not been examined for flint outcrops. Two limestone blocks containing chert nodules from the Short Creek, West Virginia, outcrop are illustrated in figures 2 and 5. It is anticipated that further work will reveal natural outcrops of the flint in the Wheeling area.

Precise stratigraphic placement of these various flint outcrops remains slightly uncertain, but the flint is believed to come from the Fishpot Limestone Member. In the Adena area of Jefferson County, the flint horizon lies about 60 feet above the Pittsburgh coal, placing it below the Fishpot coal, at the horizon of the Fishpot limestone. It was at first believed to lie in the Redstone Limestone Member, which lies immediately over the Pittsburgh coal, but study of Lamborn's (1930) and Berryhill's (1963) measured sections suggests that the true position of the nodular flint is in the Fishpot limestone.

At present, Fishpot chert outcrops are known only from along Short Creek, in southern Jefferson County, Ohio, and along Short Creek, Ohio County, West Virginia. Outcrops may well extend into northern Belmont County, Ohio, but have not been noted by Berryhill (1963). If this secondary nodular chert is restricted to the Fishpot Limestone Member, it may be of considerable stratigraphic importance in tracing rock stratigraphic units of the lower Monongahela Group. At present it remains unknown whether flint outcrops extend across the West Virginia panhandle into southwestern Pennsylvania. Eisert (1974) has recently described occurrences of virtually identical flint in outcrops of Uniontown limestone in the Washington County, Pennsylvania region. They lie somewhat higher stratigraphically than the

known Ohio and West Virginia occurrences.

Fishpot chert is most often light to dark brown and gray in color. Outcrop occurrences are usually a rich dark brown and sometimes dark brownish gray to almost black. Some material contains high quality bluish gray chalcedony, but most is characterized by a tan to brown limonite color. Artifact material often displays a fine irregular banding of lighter chert (Fig. 1) and the presence of small round inclusions of blue gray chalcedony. Many of these are fillings of fossil fresh water ostracods, as shown in the microphotographs in Figures 3 and 4. Fossil ostracods are of common enough occurrence in Fishpot chert to serve as an important feature distinguishing it from similarly colored Vanport or Brush Creek cherts. The latter are usually marked by the presence of marine fossils—fusulinids, sponge spicules, or larger invertebrates — which of course are completely lacking in Fishpot chert.

Artifacts and chippage of Fishpot chert are common on sites in the Short Creek, Jefferson County, area. Chippage seemed particularly common at the Bedway site, visited with James Morton in conjunction with his archeological survey of Short Creek; unfortunately, the site has been totally ruined by indiscriminate digging. Local collections examined contain points of Fishpot chert ranging from Archaic to Late Prehistoric. The single point available for illustration (Fig. 1), however, was found not in the Short Creek valley but on Brown's Island in the Ohio River, 2 miles above Steubenville and about 15 miles above the mouth of Short Creek. Because Fishpot chert is relatively distinctive, it should be fairly easy to delimit its occurrence in archeological collections. It should be looked for particularly in neighboring Belmont and Harrison counties and may even extend into Guernsey and Monroe counties.

Berryhill, Henry L., Jr.
1963 Geology and coal resources of Belmont County, Ohio. *U.S. Geological Survey Professional Paper 380.* Washington, D.C.

Eisert, Ronald W.
1974 Monongahela flint and associated workshops in the Chartiers Valley, Washington County, Pennsylvania. *Pennsylvania Archaeologist,* 44 (3):32-39.

Grimsley, G. P.
1906 Ohio, Brooke and Hancock counties. *West Virginia Geological Survey, County Reports.*

Lamborn, Raymond E.
1930 Geology of Jefferson County. *Geological Survey of Ohio, Bulletin 35,* Columbus.

Lewis, Clifford M., S. J.
1955 The Wheeling College site (46 Oh22). *West Virginia Archeologist* 7:1-8.

Stout, Wilber
1954 Monongahela Series in eastern Ohio. *Ohio Division of Geological Survey, Open File Report No. 1.*

Stout, Wilber, and R. A. Schoenlaub
1954 The occurrence of flint in Ohio. *Geological Survey of Ohio, Bulletin 46.*

Streib, Donald, and Alan Donaldson
1969 Stratigraphy of the Monongahela Group in the Wheeling, West Virginia-Ohio 15-minute quadrangle. In Alan C. Donaldson, ed., *Some Appalachian coals and carbonates: models of ancient shallow-water deposition.* West Virginia Geological and Economic Survey.

Fig. 1 (Murphy) Projectile point made from Fishpot chert.

Fig. 2 (Murphy) Limestone blocks containing chert nodules, Short Creek, West Virginia.

APPROX X20

Fig. 3 (Murphy) Photomicrograph of Fishpot chert showing fossil ostracods.

APPROX X20

Fig. 4 (Murphy) Photomicrograph of Fishpot chert showing fossil ostracods.

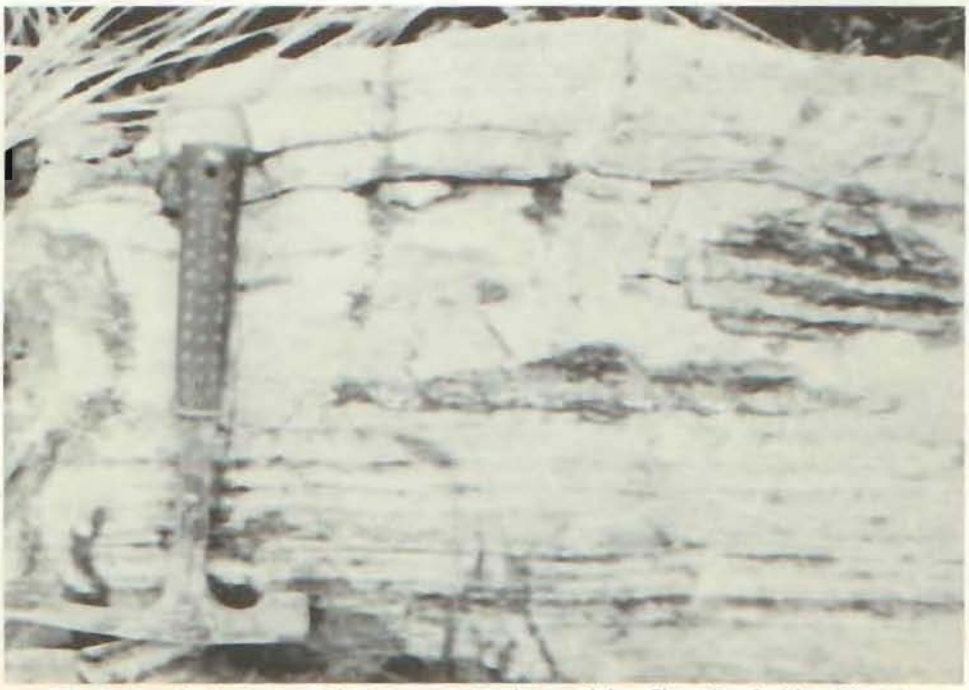

Fig. 5 (Murphy) Limestone blocks containing chert nodules, Short Creek, West Virginia.

Fig. 6 (Murphy) Outcrop of Monongakela chert in Jefferson County, Ohio